



Visualizing the worst case scenario: gaining acceptance for retreat

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“If we stick to former paradigms we are bound to be defeated in every battle. The point is not to prepare plans and tools to avoid surprise, but to be prepared to be surprised.”

- Lagadec, 2008

Myth or reality?

- Is it even possible?
- Can it happen here?
- Should we worry about it?
- When should we start thinking about this?
- Will sea-level rise be the only driver?
- Should we do anything about this in advance?

Avoiding mistakes from the past

- Overconfidence in technology and engineering solutions
- Unsustainable development and land use patterns
- Choosing only *feel-good* measures for short-term benefits
- Avoiding *wicked problems* until they escalate



Some actually prefer this option

- Alaskan communities¹
- Kamgar Putala slum, India²
- Post Hurricane Katrina (12% would relocate in 2005, 22% in 2008)³
- Other repetitively flooded communities

Community	Costs of Future Erosion Protection	Cost to Relocate	How Long Does The Community Have*
Bethel	\$ 5,000,000	N/A	> 100 years
Dillingham	10,000,000	N/A	> 100 years
Kaktovik	40,000,000	\$ 20 – 40 Million	> 100 years
Kivalina	15,000,000	\$ 95 – 125 Million	10 – 15 years
Newtok	90,000,000	\$ 80 – 130 Million	10 – 15 years
Shishmaref	16,000,000	\$100 – 200 Million	10 – 15 years
Unalakleet	30,000,000	N/A	> 100 years

*These numbers assume no future erosion protection, including that listed here, is not implemented

US Army Corps of Engineers

Others are consider it...

IN THE REGION | CONNECTICUT

To Repair the Shore, or Retreat?

The New York Times



Christopher Cap

IRENE WAS HERE Tropical Storm Irene damaged many shoreline houses on Cosey Beach Avenue in August. Some owners have rebuilt; others lack the wherewithal.

By LISA PREVOST

Published: May 3, 2012

State lawmakers have begun to grapple with that question as they consider how to plan for the effects of climate change and rising sea levels on coastal development. But they have temporarily put aside the more delicate question of whether homeowners in Connecticut's most vulnerable shoreline areas ought to rebuild at all, after a bill before the Environment Committee prompted a great deal of concern.

That legislation, proposed by the Connecticut chapter of the Nature Conservancy, called for **“a fair and orderly legal process to foster strategic retreat of property ownership, over a period of several decades,”** in coastal areas subject to erosion or repetitive structural damage.

The words **“retreat”** and **“orderly legal process”** sparked suspicions that the bill was laying the groundwork for the seizure of private homes by eminent domain.

But not all...



Why should we *plan* for relocation?

- Avoiding social and economic costs of emergency displacement and evacuation
- Allocating attention and budget to long-term efficient solutions
- Identify opportunities that could emerge from this process
- Improving outcomes, improving resilience

Why should we *plan* for relocation?

- No single governmental agency has authority to relocate people (even if they want it)¹
- There is no funding designated for the relocation¹
- No criteria for identifying relocation sites¹
- No framework for public participation in the process¹
- Current mechanisms are set to control human mobility²
- Mobility management under humanitarian and national authorities – assistance on responsive, short-term basis with short-term solutions³

Why should we *plan* for relocation?

- Climate change will have broader impacts prompting widespread relocation
- Due to complexity and extent, relocation should be conducted *a priory* worst case scenario
- It should follow key principles of relocation planning:
 - Voluntary character
 - Public participation in all steps of the process
 - Inclusive assessment of community characteristics
 - Identification of policy and planning support
 - Finding opportunities that could emerge from relocation

What about barriers?

- Controversy
- Opposition
- Data gaps
- Complexity
- Uncertainty
- Lack of policy and planning frameworks



DECISION-MAKERS

“If the state steps in to provide insurance to protect against CC driven storms, it will soon become clear that grandmothers in Albany are paying to insure the lifestyle choices of beachside condo-dwellers” – Chris Walker (Swiss Re/GBN)

It is all in our head...

- Deliberation leading to *“protective stupidity”*¹
- Inability to *“think the unthinkable”*²
- Hard to anticipate and act upon it
 - *“when things are going well, they can manage without it, and when things are going badly, it is too late to see beyond the ends of their noses”*³
- Cognitive disconnect between “what should be done” and the ability “to do it”⁴
- Lack of social memory & discernible evidence

Some are abandoned



– temporary or permanent?

Some are already or will soon be demolished...



Others are braving it out...



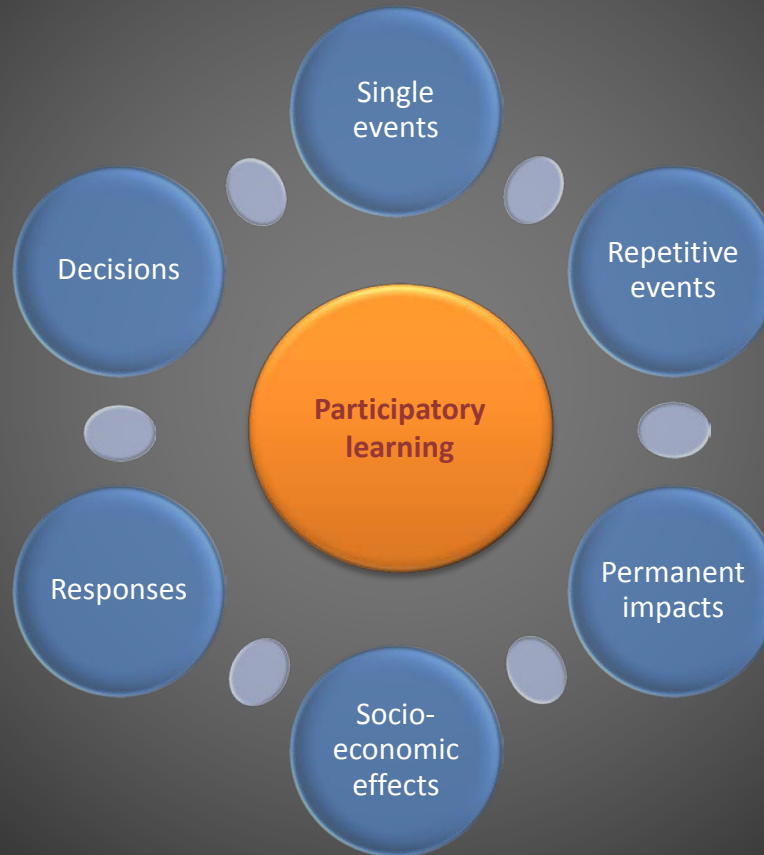
Many problems remain...



Realistic or not?

- Perceptions significantly differ – based on past experience and risk exposure
- Praise for local government and organizations, frustration with FEMA
- Sandy still considered a one-time event
- Impact on elderly
- Buy out programs – solely financial compensation

Bridging the disconnect



Learning support tools

- “I just cannot imagine that this could happen again”
- Help to boost imagination by visualization
- Innovative and creative
- Respond to misconceptions, cognitive biases, and misinformation
- Fostering engagement rather than passive learning
- Interactive visualization and scenario planning – participants become active actors in learning and exploring

Example: Relocation Scenario

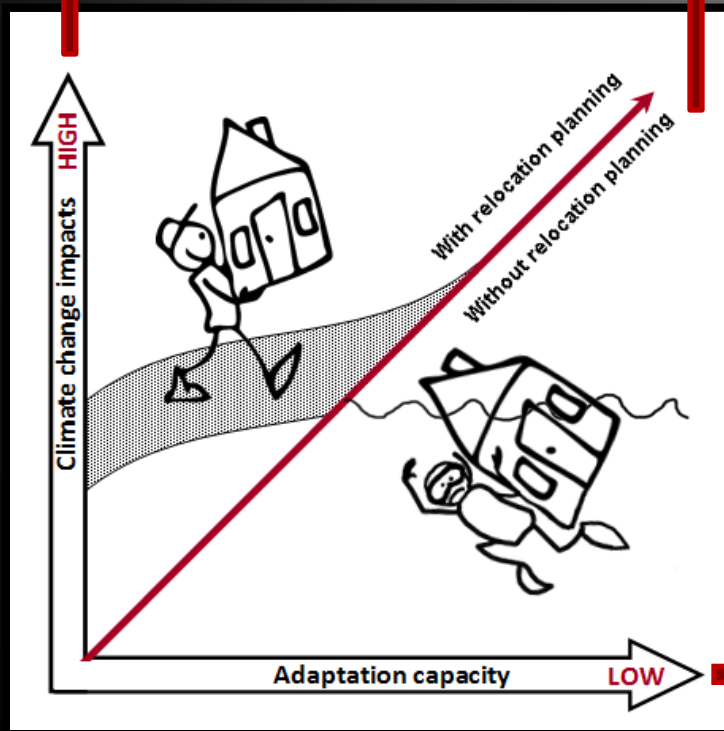
Repetitive and permanent impacts...

- Before and after visualization
- Similar communities -timeline



OUTCOMES

Social and economic cost
Indirect/secondary impacts
Duration of recovery...



Costs of maintenance and recovery,
socio-economic vulnerabilities...

Conclusions

- Interdisciplinary/institutional cooperation must
- Decisions should not be definite but rather based on multiple scenarios
- Focus on integrated and holistic approaches
- Participatory learning a priori the event needed – awareness of all possibilities and worst case scenario
- Addressing the cost, action vs. inaction

Thank you!

Please do not hesitate to approach me after the session should you have any additional questions or comments on this topic

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